

WHAT IS CLAIMED IS:

1 1. A data transmission system for transmitting packet data from an Internet  
2 Protocol (IP) host comprising:

3 an IP layer;

4 a network layer adaptable for coupling to a plurality of workstations by an  
5 intermediary of an IP network, wherein said IP host is coupled to said IP  
6 network via a layer 2 network, said layer 2 network interfacing said IP  
7 network with a set of routers;

8 a network dispatcher, said network dispatcher coupled to said IP network and  
9 operable for receiving all incoming data flows from said workstations and  
10 dispatching them to said cluster of hosts;

11 a monitoring device, said monitoring device monitoring the information  
12 defining availability of said routers; and

13 a broadcasting device, said broadcasting device operable for broadcasting said  
14 router availability information to each host of said cluster of hosts via said  
15 network dispatcher.

Sub A1 7 1 2 The data transmission system according to claim 1, wherein at least one  
monitoring device is incorporated in one of said IP hosts in said cluster of IP hosts.

1 2 3 The data transmission system according to claim 1, wherein said monitoring  
device sends, periodically, a unicast ARP request to candidate routers, said candidate  
routers selected from said set of routers.

1 2 3 4. The data transmission system according to claim 2, wherein said monitoring  
device sends, periodically, a unicast ARP request to candidate routers, said candidate  
routers selected from said set of routers.

1 2 3 5. The data transmission system according to claim 3, wherein said unicast ARP  
request sent to all candidate routes is sent on a periodic basis between 1 and 10  
seconds.

1 2 6. The data transmission system according to claim 4, wherein said unicast ARP  
request sent to all candidate routes is sent on a periodic basis between 1 and 10

1 seconds

1 7. The data transmission system according to claim 1, wherein said broadcast  
2 device sends a MAC level broadcast indicating said IP address of said requested  
3 router and said router availability information.

1 8. The data transmission system according to claim 7, wherein said router  
2 availability information is said MAC address of an available router that has answered.

1 9. The data transmission system according to claim 8, wherein said IP hosts  
2 update their ARP table when said IP hosts receive said MAC address of said  
3 requested router.

1 10. The data transmission system according to claim 7, wherein said router  
2 availability information is a default value of said MAC address of said available  
3 router.

1 11. The data transmission system according to claim 10, wherein said IP hosts  
2 update their ARP table by removing said IP address of a router when said router is  
3 determined to be unavailable.



1 14. A method of selecting a router by an IP host in a data transmission system  
2 transmitting packetized data from said IP host having at least an IP layer and a  
3 network layer to a plurality of workstations by the intermediary of an IP network and  
4 wherein said IP host is coupled to said IP network via a layer 2 network interfacing  
5 said IP network by a set of routers, comprising the method steps of:

6 sending periodically a unicast ARP request to all candidate routers, said  
7 candidate routes selected from said set of routers; and

8 transmitting to all IP hosts instructions to update their ARP table with router  
9 availability information.

1 15. The method according to claim 14, wherein router availability information is  
2 the MAC address of said router when said router is available and has answered.

1 16. The method according to claim 15, wherein said IP hosts update their ARP  
2 table when said IP hosts receive said MAC address of said requested router.

1 17. The method according to claim 14, wherein said router availability  
2 information is a default value of said MAC address of said available router.



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21. A computer program product embodied in a machine readable medium, including a programming method for selecting a router by an IP host in a data transmission system transmitting packetized data from said IP host having at least an IP layer and a network layer to a plurality of workstations by the intermediary of an IP network and wherein said IP host is coupled to said IP network via a layer 2 network interfacing said IP network by a set of routers comprising, a program of instructions for performing the method steps of:

sending periodically a unicast ARP request to all candidate routers, said candidate routes selected from said set of routers; and

transmitting to all IP hosts instructions to update their ARP table with router availability information.

22. The computer program product according to claim 21, wherein router availability information is the MAC address of said router when said router is available and has answered.

23. The computer program product according to claim 22, wherein said IP hosts update their ARP table when said IP hosts receive said MAC address of said

3 requested router.

1 24. The computer program product according to claim 21, wherein said router  
2 availability information is a default value of said MAC address of said available  
3 router.

1 25. The computer program product according to claim 24, wherein said IP hosts  
2 update their ARP table by removing said IP address of a router when said router is  
3 determined to be unavailable.

1 26. The computer program product according to claim 24, wherein said router  
2 being requested is considered unavailable when it has not answered three monitoring  
3 requests in a sequence from said router monitoring device.

1 27. The computer program product according to claim 25 wherein said router  
2 being requested is considered unavailable when it has not answered three monitoring  
3 requests in a sequence from said router monitoring device.